

**REMARKS**

Reconsideration of the Application is requested. Applicant will show that the cited combination of references would not have been obvious to one of ordinary skill in the art at the time of invention. Additionally, Applicant will show that the combination of references are not enabling and would require undue experimentation to reduce to practice. Finally, as alternative, Applicant directs the Examiner to the secondary considerations previously provided, thereby showing that the combination of references was not obvious to one of ordinary skill in the art at the time of reduction to practice. Included in the secondary considerations is evidence proving that Applicant's competitors copied his invention.

In preparation and transmitting the previous 02/25/04 Amendment, which was in response to the first Office Action of Examiner Barry, Applicant inadvertently did not include an IDS along with three industry references, specifically: a 1996 paper authored by Chitikela and Dentel, a 1990 paper authored by Prakasam of the US EPA and a 2000 WEFTEC paper authored by Virginia Polytechnic Institute. This filing error was noticed when an incorrect Office Action by a US PTO employee dated 03/29/04 was sent to Applicant requiring that the modified claims be presented according to 37 CFR 1.121 instead of the proper 37 CFR 1.73(b)(2) or 37 CFR 1.530 (d)(2), as is appropriate in a re-issue proceeding. To properly correct, Applicant contacted the Examiner on 04/20/04 requesting of the Examiner ability to correct claim construction according to 37 CFR 1.73(b)(2). During that conversation the 02/25/04 IDS omission was noticed. At that time, it was also noticed by the Examiner that entry of the 02/25/04 Amendment had been performed wherein another US PTO employee had incorrectly indicated a specification change by Applicant. With data entry challenges creating confusion for this proceeding, the Examiner instructed Applicant not to make any more filings (including the IDS) and that the Examiner would act on the 02/25/04 Amendment on its merits. Given the events and importance of the industry references, Applicant respectfully requests the US PTO include in this response after final the attached IDS along the three previously discussed industry references, which were attached to the 02/25/04 Amendment, after which it was required of Applicant not to file an IDS given entry challenges which were occurring at that time.

A sincere note of appreciation is afforded to the Examiner for his time in managing the aforesaid housekeeping challenges.

**Marked-up Set of Claims (According to 37 CFR 1.73(b)(2) and Examiner Review)**

1. (Four times amended) A method for dewatering thermophilic biological sludge[ that has been digested by a thermophilic digestion process], comprising:
  - a. adding [polymeric quaternary ammonium compounds, aluminum sulfate, ferric chloride and blends thereof as]a primary component[.] to the thermophilic biological sludge; \_\_\_\_\_  
\_\_\_\_\_ said primary component comprising at least one of aluminum sulfate and ferric chloride; wherein \_\_\_\_\_  
\_\_\_\_\_ said primary component may also comprise a polyquaternary ammonium compound; and
  - b. adding a cationic or anionic polyacrylamide to the thermophilic biological sludge[; such that any combinations of the primary component and of the polyacrylamides enhance dewatering of the sludge].
2. (Four times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s are from] is of the di-allyl di-methyl ammonium chloride (DADMAC) family of compounds.
3. (Four times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s are from] is of the epichlorohydrin di-methyl amine (epi-DMA) family of compounds.
4. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof are]said primary component is added directly to [the]said thermophilic biological sludge and, upon formation of microflocs of the sludge from [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof]said primary component, said cationic polyacrylamide is added[ to form a floc that dewateres the sludge].

5. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polymeric quaternary ammonium compound[s] with respect to aluminum sulfate range from about 1:16 to about 1:2<sub>1</sub> by weight.
6. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polymeric quaternary ammonium compound[s] with respect to ferric chloride range from about 1:8 to about 1:10<sub>1</sub> by weight.
7. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polyacrylamide with respect to aluminum sulfate range from about 1:80 to about 1:8<sub>1</sub> by weight.
8. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polyacrylamide with respect to ferric chloride range from about 1:70 to about 1:7<sub>1</sub> by weight.
9. (Twice amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of [the]said thermophilic biological sludge is between about 50 ppm:1 percent and about 350 ppm:1 percent.
10. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof, are]said primary component is added directly to [the]said thermophilic biological sludge in an amount sufficient to cause formation of a cationic overcharge within a developed micro floc system, [and an]then said anionic polyacrylamide is added[for final floc formation].

11. (Four times amended) The method for dewatering thermophilic biological sludge according to claim 10, wherein [the polymeric quaternary ammonium compound]said primary component and [the]said anionic polyacrylamide are in an approximate[ly] 1:8 to 20:1 ratio by weight[with the anionic polyacrylamide having a higher molecular weight than the polymeric quaternary ammonium compound does].

12. (Twice amended) The method for dewatering thermophilic biological sludge according to claim 10, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of [the]said thermophilic biological sludge is between approximately 50 ppm:1 percent and approximately 5000 ppm:1 percent.

13. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the]said thermophilic biological sludge is mixed with primary sludge.

14. **Claim 14 has been deleted.**

15. (Three times amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compounds, aluminum sulfate, ferric chloride and blends thereof, as well as the]said primary component and said polyacrylamide is used in solution, in emulsion or in dry form.

16. (Previously added) A sludge composition, comprising:  
water;  
solids comprising thermophiles;  
aluminum sulfate; and  
polyacrylamide.

17. (Previously added) A sludge composition, comprising:  
water;

solids comprising thermophiles;  
ferric chloride; and  
polyacrylamide.

18. (Previously added) A sludge composition, comprising:  
water;  
solids comprising thermophiles;  
aluminum sulfate and ferric chloride; and  
polyacrylamide.

19. (Previously added and currently amended) The sludge of claim 16, 17 or 18,  
including a polyquaternary ammonium compound.

20. (Previously added and currently amended) The sludge of claim 19, wherein the  
polyquaternary ammonium compound is of the DADMAC family of compounds and/or of  
the epi-DMA family of compounds.

21. (Previously added and currently amended) The sludge of claim 16, 17 or 18,  
wherein said polyacrylamide is cationic or anionic.

**Please cancel claims 22 through 38.**

39. (New) The sludge of claim 16, 17 or 18, further comprising primary sludge.